

REMARKS

Claims 1-4 are amended and pending in the present application. No new matter is introduced.

I. Claim Rejections Under 35 U.S.C. § 102

A. Claims 1 and 3.

Claims 1 and 3 are rejected as being anticipated by U.S. Patent No. 5,242,511, to Yokoyama et al. (hereinafter, “Yokoyama”). Applicants disagree and believe that Yokoyama does not teach or anticipate the claimed invention. Amended claim 1 contains the feature of “a dielectric paste for forming a spacer layer.” In contrast, Yokoyama fails to disclose a dielectric paste. The Examiner states, “Yokoyama discloses an electrically conductive paste composition having an excellent electroconductivity.” Office Action, p. 4. Applicants agree. Yokoyama is directed toward an electrically conductive composition for forming an inner electrode layer. The claimed invention is directed to a dielectric paste adapted for forming a spacer layer. Accordingly, since Yokoyama teaches a conductive composition, not a dielectric paste, claim 1 is allowable.

In addition, claim 1 recites, “an acrylic system resin as a binder and at least one solvent selected from a group consisting of limonene, α -terpinyl acetate, I-dihydrocarvyl acetate, I-menthone, I-perillyl acetate, I-carvyl acetate and d-dihydrocarvyle acetate as a solvent.” In contrast, the paste in Yokoyama does not include α -terpinyl acetate, nor does Yokoyama disclose any of the other solvents recited in claim 1. Yokoyama discloses that a preferred solvent is selected from an alcohol such as α -terpineol, and in the Office Action, the Examiner asserts that α -terpineol is also known as α -terpinyl acetate. *See* Office Action, p. 5 (emphasis added). Applicants respectfully disagree. α -terpinyl acetate is an acetate ester, not an alcohol. α -terpineol, on the other hand, is an alcohol, as stated in Yokoyama and recognized by the Examiner in the Office Action. The respective structures of these two different chemical compounds and their IUPAC names are different.

Therefore, one of ordinary skill in the art would readily recognize that α -terpineol and α -terpinyl acetate are different chemical compounds having different properties, and α -terpineol is not just another name for α -terpinyl acetate.

As Applicants point out in the specification of the present application, forming a spacer layer using a dielectric paste containing an acrylic system resin as a binder and at least one of the particular solvents recited in claim 1, prevents swelling of ceramic green sheet and generation of voids at an interface between the sheet and the spacer or fissures or wrinkles on the surface of the spacer layer. *See Specification, p. 6, lines 14, to p. 7, line 3.* In contrast, Yokoyama fails to recognize the particular combination of an acrylic system resin with at least one of the claimed solvents. Yokoyama, therefore, does not disclose or suggest any of the claimed solvents, and claim 1, and dependent claims 2-4 that are dependent from claim 1, are allowable.

II. Claim Rejections Under 35 U.S.C. § 103

A. Claims 2 and 4.

Claims 2 and 4 are rejected as being obvious over Yokoyama in view of U.S. Publication No. 2002/0056641, to December. It is asserted in the Office Action that Yokoyama discloses all the features of claim 2 except for the acrylic resin having a weight-average molecular weight equal to or larger than 450,000 and equal to or smaller than 900,000. However, as discussed above, Yokoyama does not disclose all the features of claim 2 because Yokoyama fails to disclose any of the solvents recited in claim 1, from which claims 2 and 4 are dependent.

It is further asserted in the Office Action that December discloses a second curable coating composition comprising an acrylic polymer having an acid number from about 1 to about 10 with a preferred weight average molecular weight of from about 5,000 to about 5,000,000, and it would have been obvious to one of ordinary skill in the art “to arrive at the claimed conductive paste composition” by modifying the invention in Yokoyama with the acrylic polymer of December. *See Office Action, p. 7 (emphasis added).* However, as discussed

above, the claimed composition is a dielectric paste; not a conductive paste as asserted in the Office Action. Accordingly, to arrive at claim 1, Yokoyama would also need to be modified to be dielectric.

If the proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose or if it changes the principle of operation thereof, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01.IV and 2143.01.V. In the present instance, the intended purpose and principle of operation of the composition in Yokoyama is its conductivity, and modifying it so that it becomes dielectric, as claimed, would defeat its intended purpose and change the principle of operation thereof. Accordingly, motivation for modifying Yokoyama is lacking in the present instance.

Further, in order to establish a *prima facie* case that a claimed invention is obvious, the Office Action must: (1) show some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or the combined references) must teach or suggest all the claim limitations. MPEP § 2142. However, as discussed above, Yokoyama fails to disclose a dielectric paste that includes α -terpinyl acetate or any of the other recited solvents. Furthermore, there is no teaching, suggestion, or motivation for the proposed modification to Yokoyama to arrive at the claimed dielectric paste of claims 2 and 4.

The mere fact that the references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination and the predictability of the results. MPEP § 2143.01. Here, the fact that the molecular weight disclosed in December could be combined with the features in Yokoyama does not render the resultant combination obvious because there is no suggestion of the desirability for such a combination or predictability of preventing swelling of ceramic green sheet and generation of voids, fissures or wrinkles on a surface of a dielectric spacer layer as discussed above. This is especially the case here since the composition proposed to be modified is conductive while the claimed invention is for a dielectric paste.

In the Office Action, Modifying Yokoyama with December is reasoned to be obvious because December discloses solvents that overlap with solvents in Yokoyama. *See* Office Action, p. 7. However, overlapping disclosure of solvents in Yokoyama and December, which are provided in different contexts, does not in and of itself provide any motivation for combining the references. “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure.” MPEP § 2143. Applicants were the first to recognize that the particular combination of an acrylic system resin with at least one of the claimed solvents results in a dielectric paste that prevents a ceramic green sheet from dissolving in the solvent contained in the dielectric paste, therefore, preventing generation of voids, fissures, and wrinkles. *See* Specification, p. 6, lines 14, to p. 7, line 3.

This information was not available to one of ordinary skill in the art at the time of conception of the invention by Applicants, and the cured coating composition in December, used in electrophoretic deposition, is different from the electrically conductive composition in Yokoyama. Accordingly, one of ordinary skill in the art would not have a reasonable expectation of success to prevent voids as discussed above by making the proposed combination, and therefore, would have no apparent reason to modify Yokoyama with the features in December. *See KSR Int’l Co. v. Teleflex Inc., et al.*, 127 S.Ct. 1727, 1740-1741 (2007) (Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the market place; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. (emphasis added)). Accordingly, claims 2 and 4 are allowable.

III. Provisional Double-Patenting Rejection

The Examiner has entered a provisional double-patenting rejection over co-pending Application No. 10/580,991 directed to a conductive paste. In entering this rejection, it is reasoned that both applications contain identical paste compositions. However, independent claims 1 and 4 of Application No. 10/580,991 have been amended to include a conductive

Application No. 10/582,994
Reply to Office Action dated March 27, 2008

material in an amendment filed concurrently with the present amendment. In contrast, the present claims are directed to a dielectric paste. Accordingly, the claims of the present application cannot be obvious over the claims in Application No. 10/580,991. Therefore, withdrawal of the provisional double-patenting rejection is respectfully requested.

IV. Conclusion

Applicants respectfully submit that all of the claims remaining in the application are now allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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